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ABSTRACT

This conference reaction paper tracks some of the common themes that run through five papers presented at the same conference at the session on curricular and instructional issues in compensatory education with special reference to Chapter 1 of the Education Consolidation and Improvement Act of 1981. The reaction paper attempts to interpret the diverse lines on inquiry represented in the five research papers and establish a general framework for thinking about compensatory education programs. It focuses on basic conditions that seem to account for how instructional effects are achieved. The five papers make a case that the conventional wisdom of instructional design for compensatory education is wrong. Mastery-type plans with their emphasis on small steps through the content may prepare students to do well on standardized achievement tests, but the validity of that criterion for judging what students know and are able to do is questionable. Compensatory students are getting higher scores on standardized tests, but their ability to do schoolwork independently is not improving. These papers suggest that the instructional designs typical of compensatory education fragment the educational experiences of students and, thus, fail to provide them with the coherent mental representations necessary to do schoolwork. This effect appears to be especially pronounced when students are grouped apart from their peers for remedial instruction. These conclusions point to a need for redirection at the level of curriculum and instruction. That redirection is likely to require a fundamental change in how Chapter 1 is designed and administered. A list of references is included. (PS)

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VISION AND REALITY: A REACTION TO ISSUES IN CURRICULUM AND INSTRUCTION FOR COMPENSATORY EDUCATION

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VISION AND REALITY: A REACTION TO ISSUES IN CURRICULUM AND INSTRUCTION FOR COMPENSATORY EDUCATION

In recent years substantial progress has been made in our knowledge about teaching the basic skill subjects of reading and arithmetic, especially to lower-achieving students in the early elementary grades. In their papers prepared for this conference, Romberg, Calfee, Adams, Brophy, and Wilkinson do an excellent job of summarizing components of this knowledge and relating them to significant issues of curricular and instructional policies for compensatory education.

Each paper has several important features that merit recognition and comment. However, I saw my function at this conference as one of integration rather than commentary. In structuring my remarks, therefore, I have attempted to track some of the common themes that run through these papers. Although this approach precludes attention to details of individual papers, I see this tracking exercise as valuable for interpreting the diverse lines of inquiry represented in these papers and for establishing a general framework for thinking about compensatory education programs.

My comments are organized around a framework for interpreting instructional research. The framework is constructed from an analysis of what appear to be central dimensions that drive program effectiveness (Doyle, in press b). The focus is on basic treatment conditions that seem to account for how instructional effects are achieved. Within this framework, findings from instructional research are viewed as sources of analytical categories that can be used to reason about teaching and construct solutions to classroom problems rather than as sources of guidelines that teachers can apply directly in their classrooms. At the level of program planning, these analytical categories would seem to be especially useful in directing attention to significant features of instructional effectiveness.

Interpreting Instructional Research

All of the authors devoted a substantial part of their reviews to matters of instruction and instructional effectiveness. Calfee paid close attention to how reading instruction is conducted and how it might be changed to be more consistent with what we know about reading processes. Brophy's review of process-outcomes research provides a marvelous overview of the multiple dimensions of teaching and learning in classrooms. Indeed, Brophy's reviews of research in this area are distinc-

tive in one important respect: rather than simply cataloguing the raw "findings" of individual studies, Brophy uses these findings as data points which specify a much broader model of teaching practices and their effects. This model is used, in turn, as a framework for integrating major findings and for generating new practices that are recommended because of their consistency with these findings rather than their direct empirical base. This approach is of considerable value in making sense of the findings from separate studies in this area.

How can this rich array of instructional research data be used to think about alternative designs in compensatory education? To answer this question, I constructed three analytical categories, viz., content coverage, explicitness, and accountability, that, taken together, appear to synthesize much of the current research knowledge and enable us to account for the ways in which program effects occur.

Content Coverage

Content coverage, as measured by such indicators as opportunity to learn, curriculum pace, and academic learning time, has strong empirical support as a central dimension of instructional productivity. As an analytical category, coverage focuses attention on curriculum and specifically the extent to which the content covered in class matches the official curriculum embodied in school district documents and achievement tests. Indeed, little connection between teaching events and measures of student outcomes can be expected if content is not common across these two domains. At the level of application, one suspects that dramatic changes in school achievement can be traced largely to an increased alignment of the content of instruction with the content of the criterion measure. It can also be noted that the provision of compensatory instruction through "pullout" programs or extra tutorial sessions can have the effect of multiplying the number of curricula low achievement students must cover unless careful attention is given to the alignment of content across instruction settings.

Student engagement. Student engagement is implied in the concept of coverage as commonly used in studies of teaching effects. If the teacher is the only participant in classroom events who ever actually works with the curriculum, then it can hardly be said that the content is being covered in any meaningful sense. Content must be covered, in other words, by the students, and any instructional procedure that leads to such student engagement with content is likely to be effective.

Placing engagement or "time-on-task" as a subcategory within the area of content coverage has an important advantage:

It highlights the task dimension of the time students spend in instruction and militates against the questionable conclusion that time by itself is an instructional treatment.

Content representation. Brophy postulates an interesting contrast around the theme of how the curriculum is conveyed to students, suggesting that teachers who carry the curriculum personally to students are more successful in enhancing achievement than those who rely on materials to do this transporting. The precise reasons for this effect are not altogether clear, except perhaps, as Calfee suggests, the materials themselves as well as the directions supplied to teachers on how to use them are often quite poorly designed.

The issue of content representation, i.e., the form content takes in classrooms, is rightfully beginning to acquire prominence in teaching research. Indeed, this issue is central to what might be called the "curriculum" papers by Romberg, Calfee, and Adams in which they explore the nature of mathematical knowledge, or reading, or thinking.

In my own work I have been drawn to the view that content is represented fundamentally in the work students are required to accomplish in classrooms rather than simply what teachers say or how materials are designed (Doyle, in press a). This view calls attention to the assignments students are given and to the way in which the products students generate in response to these assignments are judged by the teacher. As will be seen shortly, this view of content representation will provide a useful framework for examining other aspects of curriculum and instruction in compensatory education.

Domain specificity. The issue of content coverage is related to a theme Adams sounds in her struggle with the problem of the domain specificity of thinking skills. This problem is usually framed as a transfer question: Can students acquire broadly applicable thinking strategies that improve their efficiency in processing information in several curriculum domains? This question seems especially applicable to compensatory education since many students in compensatory programs have obvious limitations in their strategies for handling academic work.

I will consider the question of the appropriateness of thinking strategies as an approach to compensatory education in the next section. With respect to the transferability of thinking skills, I remain convinced that the acquisition and utilization of information-processing strategies is fundamentally domain specific (Doyle, 1983). In other words, an understanding and flexible application of intellectual processes is knowledge driven. To know what to do when, one must know the substance of a field. As Romberg suggests in his

paper, such problem-solving abilities are embedded in semantic knowledge of the structure and connectedness of a discipline. Without this context of knowledge, skills are highly abstract.

Adapting instruction (and curriculum). The most startling and potentially revolutionary theme emerging from these papers has to do with the foundations of instructional design for compensatory programs. Conventional wisdom has it that instruction for compensatory education should be based on mastery assumptions. The argument is that low-achieving students have not acquired the entering capabilities and perhaps lack the inclinations needed to accomplish academic tasks on their own. As a result, they need strong "individualized" or "adapted" instructional support in the form of explicit goals, a carefully planned sequence of small steps through the curriculum, frequent testing and feedback, and supplemental or "compensatory" instructional time.

In practice, these instructional considerations have important, but often overlooked, curricular consequences. The requirement to translate curriculum into a sequence of small, explicit steps limits the kind of knowledge that can be conveyed to students (Jackson, 1985) and, Romberg argues, represents content as discrete skills rather than as a semantic network of information structures and processes. As a result of this fragmentation of curriculum, students do not acquire an adequate semantic framework to give meaning to the discrete pieces of content they encounter. As Calfee maintains, efficient thought requires a coherent mental representation, and it is precisely this coherence that is lost in fragmented remedial programs. As a result, compensatory programs often do not enable students to apply their skills in complex situations which differ from the constrained instructional context in which they were acquired. In other words, little transfer from compensatory to regular classroom settings occurs.

A similar argument can be constructed from the grouping studies reviewed by Wilkinson. Grouping, both within and between classes, often leads to curriculum differentiation. Students in high-achieving groups have many opportunities for self-direction and self-pacing in structuring their own tasks and approaches to learning. Students in low-achieving groups are typically relieved of the responsibility to structure their learning because tasks are simplified and instructional prompting is high. Thus, low-achieving students have fewer chances to experience knowledge domains in their full richness of meaning--to read or to do mathematics--than their higher-achieving peers. Moreover, the rules for behaving in low-achieving groups are often different from those in higher-achieving groups. In the end, low-achieving students have little opportunity to learn how to participate independently in regular school work.

The central point here is that instructional differentiation often results in an unintended curriculum differentiation and this latter differentiation can defeat the long-term goal of empowering compensatory students to participate successfully in regular classroom settings. Certainly there is evidence that mastery programs can improve the performance of low-achieving students on standardized tests. To an ever increasing extent, however, this accomplishment is being criticized on the grounds that the content represented in standardized test items is an inadequate representation of knowledge structures in various disciplines. Thus, test performance does not necessarily equal true achievement in a knowledge domain. Moreover, high performance on standardized test items may be symptomatic of either understanding of a knowledge domain or training to the test. In the latter case, test performance is illusory because it does not reflect empowerment in the knowledge structures required to do academic work. Indeed, as Romberg suggests, it may well be that the problems of sustaining effects in compensatory education can be traced to the failure of mastery programs in establishing an adequate semantic context for understanding and using intellectual skills.

Content appropriateness. Many have suggested, or course, that a curriculum geared to knowledge structures and understanding is inappropriate for low-achieving students, at least until they have mastered "basic" skills. On the other hand, there is considerable anecdotal and even some formal evidence that an emphasis on thinking has significant consequences for improving performance in compensatory programs (e.g., Pogrow & Buchanan, 1985). This theme, of course, runs through Adams' analysis of programs that attempt to teach thinking skills. In many instances it seems that programs which are heavily academic presuppose academic ability and are successful primarily with high-achieving students. On the other hand, programs which rely on everyday knowledge of the world stimulate interest and participation among compensatory students but their effects do not readily transfer to academic work.

Explicitness

Explicitness directs attention to a central dimension of teachers' explanations, assignments, prompting, and feedback of classrooms. Most instructional research indicates that a high degree of explicitness in defining goals, specifying assignments, explaining how work is to be accomplished, and providing guidance and feedback is required, especially in the early stages of learning or when working with novices or with students who lack academic skills. It is important to underscore that explicitness does not necessarily imply an emphasis on rote memorization or mindless drill and practice. Explicitness simply means that students are told or shown what they are

to learn and how to use specific cognitive operations to accomplish work. For example, students can be told directly how to select the main idea of a passage or how to formulate a cause-and-effect argument. Indeed, many have argued that explicit teaching is appropriate, in principle, for comprehension, problem solving, and other complex forms of academic work for which the underlying processes can be explained or demonstrated by teachers and practiced by students (Brophy & Good, 1986; Carnine & Stein, 1981; Collins & Smith, 1980; Pearson & Tierney, 1984; Rosenshine & Stevens, 1986).

At the same time too much explicitness about tasks can be counterproductive. A high degree of explicitness about operations to use in accomplishing work or about the character of the final product reduces the need for students to struggle with meaning, make their own decisions about work, and generally to participate in generating their own knowledge in a domain. If, for example, the purpose of an assignment is to have students learn to interpret information or make decisions about how and when to use skills and strategies, then the task must be sufficiently ambiguous to leave room for students to exercise their own judgment.

The management of explicitness can be a tricky business for teachers (Doyle, 1983). As Calfee argues, a failure to provide adequate specifications for work, sufficiently clear explanations of what to do, or appropriate feedback for performance can make it impossible for students to accomplish tasks and lead to the invention of erroneous strategies and understandings. At the same time, over-specifying requirements and operations can restrict the range of opportunities students have to learn important aspects of the curriculum. Moreover, there are classroom pressures that impinge upon teachers and shape their explicitness during lessons. Studies of academic work suggest that ambiguous tasks are often unstable in classrooms (Doyle & Carter, 1984). Management of the work flow is difficult when students are struggling with ambiguity. Errors increase and completion rates decrease. And some students are skilled at eliciting explicitness from teachers in order to circumvent task demands. Under such circumstances, teachers have a difficult time maintaining appropriate levels of explicitness in instruction.

There is an interesting connection between explicitness and abstractness. It is typically assumed that explicit instruction, because it is specific, reduces abstractness. But, as Greeno (1980) observes, the statement "2 X 4" is quite abstract despite its broad familiarity. To what? Four what? And, if the answer is only an item in memory, "times" is a fundamentally mysterious operation. This analysis suggests that abstractness is a function of semantic context. If students fail to understand what academic propositions mean or

if meaning is limited to familiar operations in classroom task systems, then little enduring academic achievement can be expected to result from teaching.

Accountability

Findings from process-product studies of teaching suggest that accountability for work, achieved through such means as checking homework and monitoring progress, is strongly associated with student achievement. Studies of academic work in classrooms (Doyle, 1983) similarly have indicated that accountability drives the curriculum for students. Students attend to tasks for which they are held accountable and expend energy to understand and negotiate requirements. In a very real sense, the policies that govern accountability in a teacher's class define the functional curriculum for students by activating and directing student engagement.

Like explicitness, accountability is a difficult aspect of classroom life to manage. Stringent requirements, especially for inherently demanding work, can discourage students, increase tensions in teacher-student relationships, and reduce intrinsic motivation to learn. Softening accountability can suggest to students that the work is not important or can be accomplished without careful attention to detail. And some students are skilled in reducing the risk associated with accountability for tasks by eliciting a teacher's generosity in judging products. Many teachers cope with these complex demands by creating a surplus economy of credit in classrooms that can be used to reduce risk to encourage students to attempt demanding tasks while maintaining a climate of accountability. In the end, however, one suspects that this shifting of accountability standards has a powerful effect on the importance students attach to school work.

The Problem of Meaning in Classroom Work

My reactions to the curriculum and instruction papers centered on two basic themes. First, curriculum (i.e., the substance of teaching events) is a central but often overlooked dimension in program effectiveness. Second, the curricula of most compensatory programs does not represent well the knowledge domains which give meaning to discrete skills. Unfortunately, much of the program planning in compensatory education has concentrated on instructional processes rather than curriculum functions, and, as we are beginning to learn, the consequences are problematic from the perspective of the type of empowerment students acquire in compensatory programs. At the same time, most of the curriculum ideals, particularly with respect to the semantic representation of content in school

work, are quite difficult to translate into classroom events. In the end, there appears to be some fundamental tensions between vision and reality in compensatory education. I will explore these tensions in terms of the problem of meaning in classroom work.

The problem of meaning in classroom work if formidable. In many classes students seldom accomplish tasks in which they are required to struggle with meaning. Of course, they often struggle with the meaning of work: What are they supposed to do, when do they have to finish, what is the answer to the fifth problem, etc. But meaning itself is seldom at the heart of the academic tasks they accomplish. Grammar usually consists of selecting one of two words in parentheses that "sounds right" rather than an effort to express a thought accurately and clearly. Writing assignments frequently require students to follow a format to construct a text that has a specified number of adverbs and transition words rather than an occasion to communicate ideas. And math problems are typically exercises in computation rather than interpretation and decision-making.

A concern for meaning would require that a teacher focus explicitly on the semantic thread that ties tasks together across separate class sessions. When students are studying topics which extend across several days, such as the nature of the scientific method or the operations of the circulatory system, a teacher needs to describe the connections between lessons in order to build broad understandings of content and place individual tasks within a wider context or understanding. In addition, a teacher must design tasks that require students to integrate information across individual lessons and class sessions.

Meaning in school subjects, especially at the secondary level, often resides in the concepts and principles of the disciplines. If skills are isolated from this propositional context and treated as interchangeable parts in the daily scheduling of lessons, then meaning is likely to be lost and students will not acquire flexibility and fluency in using their skills.

Studies of academic work suggest that tasks are shaped by the daily routines of organizational life in classrooms. Moreover, some tasks appear to be more "suited" than others to the activity systems that commonly occur in these settings. In my own work I have found that there are striking differences between tasks involving familiar work and tasks involving novel work. Familiar work is typically organized around routinized work patterns, such as warm-ups in math classes and recurring journal writing segments and spelling assignments in English classes. In addition, familiar work is usually defined quite

explicitly, and students are given a great deal of guided practice with problem types. Novel work, on the other hand, requires students to assemble information or processes in ways that have not been demonstrated to them in advance.

When familiar work is being done, the flow of classroom activity is typically quite smooth and well ordered. Tasks are initiated easily and quickly, work involvement and productivity are typically high, and most students are able to complete tasks successfully. When novel work is being done, activity flow is slow and bumpy. In comparison to lessons with familiar work, introductions to novel tasks are lengthy and work involvement and productivity are sometimes low. Indeed, rates for student errors and noncompletion of work are high when novel work is assigned. Finally, students sometimes respond to the ambiguity and risk involved in novel work by negotiating directly with teachers to increase the explicitness of product specifications or reduce the strictness of grading standards. Many teachers avoid struggles over work demands by what might be called anticipatory management of the curriculum. This phase simply means that a teacher excludes novel work from the curriculum or creates a highly familiarized task environment to smooth out possible workplace tensions in advance. In sum, novel work stretches the limits of classroom management and intensifies the complexity of the teacher's task of orchestrating classroom events. In response to these pressures on work flow in the classroom, teachers often redefine or simplify task demands or they reduce risk by softening accountability.

This discussion points to the fact that meaning is often vulnerable in lessons because of the management pressures that shape classroom events. This problem is likely to be especially large in classes of students who lack either the inclination or the ability to do academic work successfully. In such circumstances, the flow of activity is often not smooth and has little power to hold students' attention. Routinized and predictable work, therefore, often "fits" management demands better. At the same time, work that fails to establish a semantic framework that organizes and integrates the pieces of curriculum will not enable students to develop the capacity to do school work independently. Constructing work that adequately represents the curriculum and can be accomplished by students remains, then, a fundamental problem in teaching at all levels, including compensatory education programs. Solutions to this problem will require increases in our understanding of curriculum representations and classrooms.

Conclusion

In concluding, I would like to underscore the central message of these curriculum and instruction papers for compensatory education. These papers make a case that the conventional wisdom of instructional design for compensatory education is wrong. Mastery-type plans with their emphasis on small steps through the content may well prepare students to do well on standardized achievement tests. But serious questions are being raised concerning the validity of this criterion for judging what students know and are able to do. Compensatory students are getting higher scores on standardized tests, but their ability to do school work independently is not improving. These papers suggest that the instructional designs typical of compensatory education fragment the curricular experiences of students and, thus, fail to provide them with the coherent mental representations necessary to do school work. This effect would appear to be especially large when students are grouped apart from their peers for remedial instruction. Under such circumstances, the content and the norms of behaviors in low-achieving groups is clearly not geared to advancement into regular school programs.

If taken seriously, this message calls for a radical revision of compensatory education and a redirection of program efforts at the school level. In particular, we need to shift our emphasis from fragmentation to coherence and from differentiation to integration. Unfortunately, I am not optimistic that such a redirection will occur. There is likely to be considerable compatibility between the operating requirements of Chapter 1, with its emphasis on performance and accountability, and the mastery approach to designing instructional programs. A redirection at the level of curriculum and instruction is likely to require a fundamental change in how Chapter 1 itself is designed and administered.

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